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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/913,014

Applicant(s)

FAN ET AL.

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18, 27 and 28 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 10-12, 25 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7, 9 and 19-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ramsay et al. (USPN 3800893).

Ramsay teaches an apparatus for detecting the oscillation (vibration) amplitude of an oscillating object comprising an optical radiation source (320), a detector comprising first and second optical (light) radiation sensors (322,324) adjacent each other and both receiving radiation from the source wherein the source and detectors are located on opposite sides of the oscillating object, so that when the object is located between them it blocks a portion of the radiation directed toward the detector (figure 7, col 9 lines 1-20 and col 13 line 62 – col 14 line 12), a processor (computer) coupled to the detector to receive first and second output signals wherein the processor processes the signals to obtain an indication of the amplitude of oscillation of the object (col 1 line 60 – col 2 line 9, col 11 lines 1-63 and col 17 lines 15-43) with control by comparing the oscillation amplitude to a reference value in real time (col 4 line 50 – col 5 line 25, col 6

line 57 – col 7 line 7 and col 7 lines 23-37). The sensing areas are directed toward the optical source and adjacent each other and sensors receive radiation directly from the source (figure 7). It is noted that the oscillating object being measured does not further limit the apparatus. See also Ramsay claims 1-12, 14-19 and 22-24.

3. Claims 1-5, 7, 9 and 19-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Walters (USPN 6279248 B1).

Walters teaches an apparatus for detecting the oscillation (vibration) amplitude of an oscillating object (col 2 lines 45-63 and col 3 lines 1-22) comprising an optical radiation source (410, col 6 lines 42-56), a detector comprising first and second optical (visible light) radiation sensors (422, 424) adjacent each other and both receiving radiation from the source wherein the source and detectors are located on opposite sides of the oscillating object, so that when the object is located between them it blocks a portion of the radiation directed toward the detector (figure 4 and col 7 lines 9-30), a processor coupled to the detector to receive first and second output signals wherein the processor processes the signals to obtain an indication of the amplitude of oscillation of the object (col 4 lines 35-52 and col 7 lines 31-59) with control by comparing the oscillation amplitude to a reference (threshold) value (col 11 lines 18-60 and col 13 lines 31-42) in real time (col 1 lines 60-66 and figure 9). The sensing areas are directed toward the optical source and adjacent each other and sensors receive radiation directly from the source (figure 4). It is noted that the oscillating object being measured does not further limit the apparatus. See also Walters claims 1-4.

***Response to Arguments***

4. In response to applicant's argument that the references do not teach that the oscillating object is an ultrasonic transducer, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

It is noted that the oscillating object being measured does not further limit the apparatus.

Therefore the 102 rejection of claims 1-5, 7-9 and 19-24 as anticipated by Ramsay stands and the 102 rejection of claims 1-5, 7, 9 and 19-24 as anticipated by Walters also stands.

***Allowable Subject Matter***

5. Claims 13-18, 27 and 28 are allowed.

6. The following is an examiner's statement of reasons for allowance: The closest prior art teaches amplitude measurements using opposed radiation sources and detectors however there is no disclosure of the width of the sensing area, particularly relative to the sum of the half width of the oscillating object. See Ramsay (USPN

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3800893). Neither does the prior art teach such a device for measuring and controlling ultrasonic waves, particularly those generated by ultrasonic welders and wire bonders. Conventionally vibration of such devices is measured by reflected light suggesting a configuration wherein the light source and detector are on the same side of the object being measured. See Walker et al. (USPN 5734108), Maruyama et al. (USPN 6323943) and Kotidis et al. (USPN 5623307).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Claims 6, 8, 10-12, 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The closest prior art teaches amplitude measurements using opposed radiation sources and detectors however there is no disclosure of the width of the sensing area, particularly relative to the sum of the half width of the oscillating object. See Ramsay (USPN 3800893). Neither does the prior art teach such a device for measuring and controlling ultrasonic waves, particularly those generated by ultrasonic welders and wire bonders. Conventionally vibration of such devices is measured by reflected light suggesting a configuration wherein the light source and detector are on the same side

of the object being measured. See Walker et al. (USPN 5734108), Maruyama et al. (USPN 6323943) and Kotidis et al. (USPN 5623307).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Lynne Edmondson  
Examiner  
Art Unit 1725

 1/8/04

LRE  
January 8, 2004